

Axial Capacity of Piles in Intermediate Geomaterials (IGM)

Meeting Minutes for Progress Conference Call No. 1

Date: October 5, 2006

Time: 13:00 pm MST

Participants: MDT: Fredrick Beal, Brain Collins, Cameron Klobberdanz, Susan Sillick
MSU: Heather Brooks, Eli Cuelho, Bob Mokwa

Notes by: Bob Mokwa

Minutes

- 1) An overview was provided by MSU of the primary work tasks to date. These included: 1) Literature review, 2) Collection and organization of MDT project files, and 3) Analyses.
- 2) the discussions primarily addressed Tables 1 and 2 (included with these minutes). Cameron requested that an additional column be added to Table 1 that designates the type of IGM on each project. The attached Table 1 has been updated accordingly.
- 3) Table 2 summarizes the main categories of data that MSU has in their files for the 12 projects identified as 1st Priority Projects. These are the projects that will be back-analyzed, initially. Additional projects from Table 1 may be analyzed in full, or partially, depending on the results from the first series of analyses.
- 4) Table 2 also identifies additional data that is necessary to complete the back-analyses for each project. Fred, Cameron, and Brian will track down the additional missing information identified in the table, and will supply MSU with the additional information as it is collected. They anticipate they will have all the information by mid November 2006.
- 5) Project information summarized in Table 1 will be used by MDT to determine if any additional projects should be included in Table 2, and likewise, if any projects should be removed from the 1st Priority list shown in Table 2.
- 6) As requested by MDT (Brian, I think), Project #4539, Big Hole River 3 km SW of Jackson, will be removed from the list of 1st Priority Projects (Table 2) because the IGM encountered on this project is not a common material in Montana. The IGM for this project is identified as very dense sandy gravel.
- 7) Based on the contractor's schedule for the Swan River Project (#4228), PDA and pile driving activities are expected to occur before November 1. Brian will contact Heather regarding a possible field visit to observe the PDA activities on site.
- 8) No design or foundation report is available for Project #4230 (Bridger Creek 3 km NE of Bozeman). It appears that most written information was transmitted in a piecemeal fashion through emails and memorandums.
- 9) MSU observed an apparent error in the DRIVEN 1.0 program that was used as part of the original analysis for Project #1041 (NW of Sidney-N). Based on research

conducted by MSU, it appears that older versions of DRIVEN (1.0 and 1.1) contained an error in the analyses of some metric H-pile sections. The error has been corrected in DRIVEN 1.2. Heather will send to MDT a summary of her relevant analyses on this project using DRIVEN 1.2 and supporting hand calculation checks.

- 10) For this research project, the next quarterly update will be in the form of a written progress report that will be due after December 31, 2006.
- 11) The next progress conference call will be scheduled at the end of the first quarter of 2007 – most likely in early April. By the end of December, the MSU team will provide Sue with a schedule of their availability for this phone call.

Table 1. Summary of Projects and Data Categories

Project	CN #	IGM Type	PDA on Project	Bore Logs	Design Report	Driving Logs	PDA Report	DRIVEN Calcs.	GRLWEAP Calcs.	Plans	Hammer Data
*NW Sidney-N	1041	Siltstone, Coal	N	Y	Y	Y		Y		Y	Y
Milk River- Zurich	1154	Sandstone, Siltstone	N	Y	Y						
*Volberg N & S	1514	Claystone, Siltstone, Sandstone, Coal	N	Y	Y			Y		Y	
Vic. White Coyote Rd.	1744	Gravel with Silt and Sand	Y	Y	Y		N	Y		Y	
*Nashua- E & W	2144	Claystone, Shale	Y	Y	Y	Y	Y	Y	Y		Y
Colstrip- South	2148	?	N			Y					Y
*Angela- N & S	2461	Shale	N	Y	Y	Y		Y	Y		Y
*Poplar River- NW	2792	Claystone	N	Y	Y	Y		Y			Y
Willow Cr.-NE of Blackfoot	3399	Shale	N	Y				Y		Y	
Cutbank Cr.- NE of Blackfoot	3400	Shale	N	Y	Y						
*N. Fk. Poplar Rv.- 27 km S of Scoby	3417	Claystone, Sandstone	Y	Y		Y	Y	Y	Y		Y
Shokin Cr.- S. of Ft. Benton	3887	Shale, OC Clay	N	Y	Y			Y	Y	Y	Y
Little Missouri River-E of Capitol	3988	Shale, Sandstone	N	Y	Y					Y	
Tongue River-Miles City	3989	Dense Gravel, Siltstone, Sandstone	N	Y				Y	Y		Y
Tongue River-Miles City	4174	Dense Sand, Siltstone, sandstone	N	Y				Y	Y		Y
*Swan River-3km SE of Ferndale	4228	Dense Silty Gravel	Y	Y	Y		N	Y	Y		Y
*Bridger Cr. 3 km NE of Bozeman	4230	Dense Silty Sand	Y	Y		Y	Y	Y	Y		Y
*Structures- S of Pray	4232	Very Dense Gravel	N	Y				Y	Y	Y	Y
USRS Canal-3km NE of Augusta	4235	Claystone, Siltstone, Sandstone	N	Y	Y	Y					Y
*Big Muddy Cr.-SE of Redstone	4239	Claystone	Y	Y	Y	Y	Y	Y	Y		Y
*Keyser Cr.-2km W of Columbus	4244	Shale, Sandstone	Y	Y	Y		Y	Y	Y	Y	Y
Wolf Cr.- 3km E of Vida	4268	Shale, Coal, Siltstone	N	Y	Y			Y		Y	
*Big Hole River-3km SW of Jackson	4539	Sandy Gravel	N	Y	Y	Y			Y	Y	Y
Milk river- W of Chinook	5559	OC Clay, Sandstone, Siltstone, Shale	N	Y	Y			Y	Y		Y

Notes for table:

- 1) “*” Indicates 1st priority projects for analysis (see Table 2).
- 2) Shaded cells indicate data that is needed for analysis of 1st priority projects.
- 3) Bolded Projects have enough information to complete full analysis.
- 3) Y = yes, WTI has information; N = no, WTI does not have PDA information

Table 2. Summary of Analytical Tasks for 1st Priority Projects

Project	CN #	Data Input	Soil Profile Drawing	DRIVEN Analysis	GRLWEAP Analysis	Notes
NW. Sidney-N.	1041	X	X			DRIVEN 1.0: apparent error in report calculations (evaluating suitability of project for this study)
Volberg-N & S	1514	X				Driving logs, GRLWEAP analysis and Hammer data are still needed for analysis.
Nashua-E & W	2144	X	X	X		
Angela- N & S	2461	X				
Poplar River- NW	2792					
N. Fk Poplar	3417	X	X			Design report is still needed in order to analyze the complete project.
Swan River	4228	X	X			Driving logs and PDA reports are needed when they are completed (project under construction).
Bridger Cr.	4230					Design report is still needed for analysis.
Structures S. of Pray	4232					Design report, driving logs and PDA reports are needed in order to complete analysis.
Big Muddy Cr.	4239					
Keyser Cr.	4244					Driving logs are needed to complete analysis.
Big Hole River	4539					DRIVEN calculations are needed for analysis.

Notes:

1) "X" indicates completed task.